

CLAIMS:

1. An audio/video system (AV) with distributed loudspeakers and an audio/video playback unit (CU) for the reproduction of audio signals (AFL, AFR, ARL, ARR) from audio channels via the respective loudspeakers and with transforming means (16) for transforming the audio signals (ARL, ARR) of at least one audio channel into modulated ultrasonic signals (URLR) and with transmitting means for transmitting the modulated ultrasonic signals (URLR) together with the audio signals (AFL, AFR) of an audio channel to at least one transmitting loudspeaker, said transmitting loudspeaker being designed for emitting the modulated ultrasonic signals (URLR) together with the audio signals (AFL, AFR) of an audio channel, and with a receiving loudspeaker (RL, RR), said receiving loudspeaker being provided with inverse transforming means (6, 7, 8) for the inverse transformation of the received modulated ultrasonic signals (URLR) into inverse-transformed audio signals (ARL, ARR) and for emitting the inverse-transformed audio signals to at least one loudspeaker of the audio/video system that is not connected to the audio/video playback unit.
2. An audio/video system (AV) according to claim 1, wherein the transforming means (16) are contained in the audio/video playback unit (CU).
3. An audio/video system (AV) according to claim 1 or 2, wherein the transmitting loudspeaker is in the form of a loudspeaker box, said loudspeaker box being designed for emitting an ultrasonic signal (URLR) representing a single or several audio channels, together with the audio signals (AFL, AFR) of one or more other audio channels.
4. An audio/video system (AV) according to claim 3, wherein the modulated ultrasonic signals (URLR) can be transmitted together with the audio signals (AFL, AFR) of at least one audio channel via an electrical connection directly to the at least one transmitting loudspeaker.
5. An audio/video system (AV) according to claim 1 or 2 or 3, wherein the audio/video system (AV) is in the form of a surround audio/video system with front

loudspeaker boxes (FL, FC, FR) and back loudspeaker boxes (RL, RR) and an optional subwoofer (SW).

6. An audio/video playback unit (CU) for the reproduction of audio signals from
5 audio channels with transforming means (16), said transforming means (16) being designed for transforming the audio signals (ARL, ARR) of at least one audio channel into modulated ultrasonic signals (URLR), and with transmitting means for transmitting the modulated ultrasonic signals (URLR) together with the audio signals (AFL, AFR) of an audio channel to
10 at least one transmitting loudspeaker, said transmitting loudspeaker being designed for emitting the modulated ultrasonic signals (URLR) together with the audio signals (AFL, AFR) of an audio channel.

7. An audio/video playback unit (CU) according to claim 6, wherein the transforming means (16) comprise modulating means for modulating the audio signals of at
15 least one audio channel into modulated ultrasonic signals (URLR) and the modulated ultrasonic signals (URLR) can be transmitted over at least one audio channel together with the audio signals of this audio channel.

8. An audio/video playback unit (CU) according to claim 6 for the reproduction
20 of audio signals from at least two audio channels, wherein the modulated ultrasonic signals (URLR) produced by the transforming means (16) from the audio signals of at least one audio channel can be transmitted over at least one other audio channel together with the audio signals (AFL, AFR) of this other audio channel.

25 9. An audio/video playback unit (CU) according to claim 6, wherein the audio/video playback unit (CU) is designed for the processing of digital (DIG-IN) and/or analog (AN-IN) audio streams.

10. An audio/video playback unit (CU) according to claim 6, wherein the
30 transforming means (16) are in the form of a digital signal processor.

11. An audio/video playback unit (CU) according to claim 6, wherein the transforming means (16) contain a low-pass filter, in order to filter out frequency components

over 20 kHz, preferably over 18 kHz, from the audio signals that are to be transformed into the ultrasonic frequency range.

12. An audio/video playback unit (CU) according to claim 6, wherein the
5 transforming means (16) execute a frequency compression of the audio signals that are to be transformed.
13. An audio/video playback unit (CU) according to claim 6, wherein the
10 transforming means (16) transform two audio channels with frequency mirroring and frequency shifting of an audio channel.
14. A transmitting loudspeaker (FL, FR) with signal-receiving means for the
reception of audio signals (AFL, AFR) and modulated ultrasonic signals (URLR) and with
15 radiating means for radiating the audio signals (AFL, AFR) and the ultrasonic signals (URLR).
15. A transmitting loudspeaker (FL, FR) according to claim 14, wherein it is in the
form of a passive loudspeaker box and the signal-receiving means for the reception of audio
signals (AFL, AFR) and modulated ultrasonic signals (URLR) comprise a frequency-
20 separating filter.
16. A transmitting loudspeaker (FL, FR) according to claim 14, characterized in
that the radiating means comprise an ultrasonic tweeter.
- 25 17. A receiving loudspeaker (RL, RR) with receiving means (6, 7) for the
reception of modulated ultrasonic signals (URLR) and with demodulating means (8)
provided as inverse transforming means for the demodulating of audio signals (ARL, ARR)
contained in the ultrasonic signals (URLR) and with reproducing means for the acoustic
reproduction of the audio signals (ARL, ARR).
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18. A receiving loudspeaker (RL, RR) according to claim 17, wherein the
demodulating means (8) communicate with a selector switch (13) for selecting one of several
audio channels contained in the modulated ultrasonic signal (URLR).

19. A receiving loudspeaker (RL, RR) according to claim 17, wherein the demodulating means (8) comprise a digital signal processor.

20. A receiving loudspeaker (RL, RR) according to claim 14, wherein the
5 receiving means (6, 7) comprise a microphone (6) and a microphone amplifier (7), and preferably the amplification of the microphone amplifier (7) can be controlled by the demodulating means (8).